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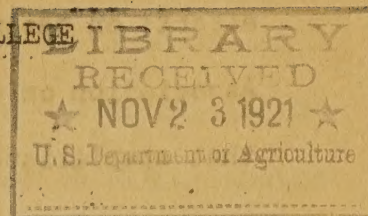
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POSITION OF THE EXPERIMENT STATION IN THE COLLEGE  
OF AGRICULTURE\*

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There are certain conditions and tendencies pertaining to the experiment stations which deserve consideration at this time. They are not all associated with the low condition of their funds, but relate to other features which are quite as fundamental to the growth and success of the stations. Improvement must naturally rest on a clear realization of the situation, and hence warrants plain speaking. The community of interest among the stations is such that what affects a part to some extent affects the whole, especially when the merits and needs of the system are being weighed.

The stations as a group perhaps reached the high water mark as far as support and facilities were concerned as the war came on. Before it was fully realized, this development had been checked. The progress back to normal and to a stage of actual new development has been very gradual, and as yet has affected only a few institutions.

Man Power of the Stations.

First of all with reference to the personnel, everything considered, it is very doubtful whether the available man power of the American stations has shown any appreciable increase in the past decade, although the quality has improved beyond doubt. Previous to the war there had been steady progress in the idea that the station needed a force of workers specially trained or qualified, who could quite largely concentrate their

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efforts on their investigations. As recently as 1917 a committee of this Association on College Organization and Policy expressed the judgment that specialists "should devote their time mainly to one kind of service"--research, teaching, or extension.

The progress previously made in this line has, however, been largely lost. Whereas in 1914 fully sixty per cent of the station employees were free from teaching or other college duties, last year the proportion had fallen to nearly forty per cent. To the extent of sixty per cent, therefore, the stations were required to share their workers with the teaching, or to utilize part time teachers. The present year there have been several additions to the station forces, about four-fifths of which, however, have been of the assistant grade, but even of these nearly half are only part time station employees, being connected with either the instruction or extension work.

While, therefore, the colleges have been somewhat more liberally provided with funds for several years past and have been recruiting their forces, it does not appear that much progress has been made in the direction of a specially constituted station staff concentrated primarily on investigation. The reason for this condition seems largely attributable to the necessities of teaching and the attitude of the colleges.

#### Station Staff in Part a Makeshift.

This means that after nearly thirty-five years the stations are only in part free to select men primarily for their special line of activity. Quite largely they must share the teaching force of the colleges. They must make the best use they can of such material, whether of assistant grade or



head of department. The higher the rank of these dual employees, the more likely are they to have been selected with reference to the work of the college as a whole instead of that of the station. Department heads, for example, are more commonly chosen with primary reference to administration and teaching, although these heads in large measure determine the strength their departments are to develop in research.

Again, the director of the station, even though he is dean, may not always be permitted to select new appointees for the station. Instances of this have arisen of late in several institutions. The selection has been taken in hand by the chief executive who has gone out to hunt up men and has decided on them without the advice of the director. Similarly, employees have been dropped from the staff without conference with the director, leaving work unprovided for. Such action, of course, will not be defended as good administration, but it illustrates how far the matter sometimes goes.

#### Need of Concentration.

I need not enter here into a discussion of the merits of this dual service, but the experience of thirty years has demonstrated that for the systematic prosecution of serious investigation the station needs a force it can depend on, whose attention is primarily in that direction. The present nature of its problems emphasizes this. Two half-time workers, with the distractions they are subject to, rarely equal one whole one, and four quarters mean little more than vacation work for any of them. The claim that men would do better station work if they had teaching has rarely worked out where the class room has taken more than a minimum of time. Teaching has the right of way, and except in the larger colleges it fluc-



tuates in amount and may increase unexpectedly. All too often the teachers on the station staff must take up the slack. Furthermore, teaching and investigating are not necessarily compatible; some good investigators are only mediocre teachers, while good teachers may have no particular gift for investigation. The requirements are different.

The stations have spent a great deal of time and money in training men and adapting them to their work--in fitting the kind of men at their disposal for the work required of them. The task has been increased by the employment of men for dual service in the colleges without full reference to their suitability for investigation. It has been a financial strain and a hindrance.

The lack of development in man power, mentioned above, is worth considering in relation to the increased Federal appropriations now being sought. The measure endorsed by this Association would increase the total station revenues fully one-third in three years, even though the present State appropriations or allotments remained stationary. This would call for an increased man power in three years equivalent to some 500 persons on full time. At maturity the measure would fully double the present revenues, without increase in State appropriations, which would mean practically doubling the working force in seven or eight years, or the addition of some 200 persons a year. In the past twenty years, it may be mentioned, the increase in total personnel (about half of whom have been joint employees) has been at the rate of about sixty a year. The question may be asked whether without a change in policy in reference to the stations they are in position to provide for and assimilate new employees at that rate.



#### Provision for Station Administration.

Turning to the administrative situation, the condition is hardly less one of partnership and divided interest. At present the directorship of twenty-three of the stations is a separate office whose occupant gives primary attention to station affairs. In twenty-five States the office is combined with that of president of the college, dean of agriculture, or director of extension. In six States the dean's office includes the directorship of both the station and the extension service, and in three others the station director is likewise director of extension. In considerably over half the institutions, therefore, including several of the large ones, the station director has other engrossing duties which make the station management a more or less secondary matter.

Ten years ago the directorship at twenty-nine institutions was a separate office compared with twenty-three at present, so that while the agricultural colleges have been making large growth in size and in the complexity of their work, requiring more administrative attention to the agricultural work, the exclusively station director has fallen into the minority. At some half dozen institutions a vice or assistant director has been provided to help look after details of the station business. This step is a good one, as far as it goes. Thus, thirty of the fifty stations in the Federal group have made some special provision for administering the station work. It seems to me results have justified the more adequate administrative provision.

#### Station and Extension Administration.

By way of comparison, it may be mentioned that the extension work in thirty-eight of the States is in charge of a separate officer as director



of extension. The salaries for these two classes of directors present quite a contrast. The average salary of the twenty-three separate station directors is \$4,150, while for the extension directors in the same States it amounts to \$4,500. The difference in favor of the extension director ranges, in different instances, from \$300 to \$1,500. Only three of the separate station directors receive as much as \$5,000 or over, while in the extension group \$5,000 or over is a more common salary than \$4,500 is among station directors. These figures, it may be stated, are for the fiscal year 1921 after the quite general increases in the salary rate had gone into effect.

When a college pays its extension director \$6,000 and its station director \$4,500, or \$5,000 and \$4,000 respectively, or, as in the case of four States, \$4,500 compared with \$3,800 or less, the administration of the station can not be said to be rated relatively high. And when half of the separate directors of experiment stations are paid less than \$4,000, there is evidence that a just appreciation of the service or of the importance of the position is quite lacking. How can competent men be expected when new appointments have to be made?

#### Station Director a Necessity.

Speaking twenty years ago at the semi-centennial of the first experiment station, Dr. W. H. Jordan made this strong plea for the station director: "Above all, I plead for a station director who is that and nothing more. In the multitudinous duties of administration, in the broad relations which he should sustain with the agriculture of the State, in deciding upon the most useful lines of work, in the sympathetic attitude of encouragement, and if possible of inspiration, which he should maintain toward



his associates, there is abundant opportunity for the full exercise of the largest ability and the most untiring energy. If there is any official in our land-grant colleges other than the president who should not be halved it is the station director."

This contention has even more force to-day than it had twenty years ago, because the funds and the forces of the stations have increased greatly and the nature of their work has become far more exacting. With the amount of money which some of the stations are already receiving and the movement for increased Federal appropriations, more adequate attention to the station organization and administration, with a careful conservation of its funds, is one of the first and most important requirements. Wise preparation for larger resources would seem to lie in the direction of strengthening the organization and more intimate study of large questions and the means of solving them. We have the lesson of the Adams Act which fifteen years ago brought an initial increase of only \$5,000, but often found institutions quite unprepared.

#### Organization for Research.

The matter of organization is still a very important one for the American stations. Only in part has it been worked out from the standpoint of the highest interests of research. I am confident that it is a no small factor in the efficiency of the stations, and also in the attractiveness of positions they have to offer.

The station organization has quite largely followed the organization of the college departments, built on the basis of the sciences and the broad divisions of agriculture. Such a system is not always suited to the experiment station, and especially the more advanced type of inquiry



which now needs to be encouraged. The same reason for rigid adherence to the divisions of science and the subject matter of agriculture does not apply in research as in the case of teaching. Research centers around problems and ideas, and when an investigator is found with sufficient vision to conduct or direct a well rounded study, he ought to be free to follow out his reasoning. To only a limited extent, however, have specialists been searched out and appointed with reference to a particular group of problems, because it was opposed to the college scheme of organization.

It is by no means sure that the animal husbandmen as such will play the primary part in working out the theory of nutrition, or the agronomists in determining the philosophy of the use and action of fertilizers. If chemists and nutrition experts and physiological botanists and other specialists are to be brought in, as is quite evident they must be, are these most logically assigned to the animal husbandry department because their work relates to animals, or invariably classified with the agronomists because their studies deal with plants? If so, there is danger that they will be restricted as independent workers, and some of the advantage lost of a larger freedom in stepping over departmental boundaries where necessary.

#### Departmental Stratification.

The bringing of all station work under the subject matter departments usually means more than the association of workers in a given field. It means the administration of all the work of the department as a unit, in the carrying out of which a considerable measure of supervision and control may be exercised. The effect in such cases is to put a premium on



administration, sometimes on practical ability, and to place the investigator of creative ability in an inferior position, with considerable restriction on his freedom. If men of high ability in research are to be attracted and stimulated by the station field (and they are the greatest need to-day), care is needed to avoid any suggestion of stratification within departments which restricts rank or the opportunity of research workers to rise on their merits. Manifestly, also, a department which is functioning mainly as a service and teaching department ought not to stand in the way of developing inquiry, or determine the rank and opportunity open to one competent to conduct it.

This is not a theoretical difficulty, but cases illustrative of it are frequent. To cite a case in point, in one institution it has been proposed to take a station department which has long existed independently and has developed along the lines of some of the most advanced inquiry in animal nutrition, and place it under the college department of animal husbandry in order to carry out the organization plan of the college. This is to be done against the advice of the director of the station and the objection of the specialist in charge, and it has threatened to cripple if not disrupt the special research in that line. At a time when we need so much to get out of the rut of routine and convention in experiment and encourage advanced inquiry, such a result would be a great misfortune. Action of this sort might be misunderstood to imply a subordination of research to an organization ideal.

Elsewhere there is pressure to bring all the station work in the sciences under the direction of the respective science departments of the college or university. Not only would this detract from the independence



and responsibility of men capable of independent research, but it would diffuse and dissipate the station effort throughout the institution, increasing the complexities of its administration. Such a step was taken at one university a few years ago with certain of the science departments, embarrassing the station work to a degree from which it has not recovered.

#### The Unit of Organization.

Of course, I am not advocating a general breaking away from the departmental organization of the institution, but I am pointing to the desirability of some latitude and an administration which will place the station work in the hands of the director. The man and his job may be more important to the station than subservience to a stereotyped form of organization. After all, organization is but a means to an end, and the station's best interests are so important that there should be sufficient elasticity to meet them.

It is worth mentioning in this connection that the college committee report previously referred to recommended that "the individual specialist capable of working independently should be regarded as the unit of organization," and that when these units were grouped to form a subject matter department, a chairman or administrative head should be designated, in whose selection the specialists composing the department should have voice. This follows the plan of some of the large universities, and it avoids placing administration above all else.

#### The Station Funds.

The serious condition of the station finances has been realized for some time, and as the legislatures in most of the States met the past winter a considerable measure of relief was hoped for. But although very material



increases were appropriated by a few States the result as a whole was disappointing.

In thirty-nine States from which returns have been received a net increase was provided for 1922 over 1921 aggregating \$384,000, or an average of nearly \$10,000 per State. (In two of the States included there are two stations, which would reduce the average per station). Many of the States, however, did not share in this average. The total amount was brought up by five States where the increase ranged from \$25,000 to \$100,000. In about half the States there was no increase whatever, and in only one-fourth did it amount to as much as \$10,000. In many cases the increase was not more than sufficient to cover the increase in salaries, allowing for no real expansion.

If the past two years are considered, in order to include other States whose legislatures met in 1920, the result is not greatly changed. The net increase for two years, 1920-22, in case of forty-three States aggregated \$965,570, equivalent to an average of a little over \$11,000 annually; but here again the contributions were from a few States, and sixty per cent either showed no increase or an amount within \$5,000 a year.

It is evident, therefore, that for quite a majority of the stations no relief of significance has yet been provided, although within the past two years the legislatures in all but a few of the States have met and there have usually been large increases in the appropriation for the college as a whole. In one-fourth of the States the station appropriation amounts to \$13,000 or less; six stations receive no State support.

It may be mentioned that in about a dozen cases the station funds are received in the form of allotments from the college appropriations,



the station having no separate budget or means of presenting its needs outside the college authorities. In only about half of these cases did the stations receive any material increase in allotment.

#### Loss of Station Identity.

Elsewhere I have referred to a loss of identity or individuality by the experiment stations. When the situation is studied broadly I think there can be no doubt that this is the case to a considerable extent. The average station at present is not the definite unit within the college which it once was--a closely organized agency for carrying out the purposes of the Hatch Act. In many cases it is not a department of the college in the usual sense, as the Hatch Act prescribes, presided over by a director with sufficient time and authority to organize and manage its work without interference. It needs a head quite as much as any subject matter department of the college does.

To a decreasing extent does the station stand definitely upon its own feet, choose its own staff, seek its own ends. In many respects it plays a secondary part, adapts means to its ends, is contingent on the teaching work of the college; if there are few students workers may be able to do considerable investigating, otherwise investigation must wait. This has been especially true in the past two years. Moreover, the station work is not only being blended with that of the graduate school, but in notable instances its activity in essential research lines is dependent on graduate students and determined by problems which they are interested in prosecuting. Its initiative is gone to that extent, sacrificed to the teaching function.

✓Experiment Station Record, Vol. 44, No. 7 (May, 1921).



Several of the stations are losing their publication series; certain of these are being taken over by the college as a whole, and their continuity as publications of the experiment station interrupted. In other cases its long standing circular series is being combined with that of extension and losing its distinctive character. In a number of instances the experiment station has no letter head to identify its correspondence, or is not mentioned in that of the college of agriculture which it uses. This would hardly happen in the case of the extension department.

#### Function the Basis of Organization and Management.

Expediency has played a large part in determining the fate of the experiment stations, especially in the past few years. It has affected their organization, administration, and personnel, in ways referred to. Sometimes it has determined the amount of appropriation or allotment conceded to research.

The function of the station has not always been so defined in action as to scrupulously conserve its funds for investigation; if it had been, some of these institutions would be more comfortably circumstanced. There is often much latitude in the use of State funds or allotments, which reduces their benefit in a variety of ways. The amounts charged up to the stations do not always represent real money. If these things were deemed necessary when conditions were abnormal, is it not time to realize the effect they have had and to balance the disadvantage? The station deserves considerate protection. Research on the defensive in its own camp should be an anachronism.

As I see it, the situation with respect to these research departments of the agricultural colleges presents something of a contrast to that



of research departments in industrial concerns or foundations for conducting and promoting research. The latter have a strong, independent organization, designed to do the special work for which they are provided. The first step is usually to secure a research director, carefully chosen for ability to discharge that particular function, with ample authority and without other conflicting duties. He studies the field and develops a working program; then he assembles a corps of specialists and helpers who give themselves up to their investigations. The chief contingencies are the field and the funds, and these define the effort.

Twenty years ago Dr. Jordan declared that the experiment station "should have a strong, well defined, and independent individuality," and that it was never intended it should be in any sense an appendix to class room instruction. To-day it can not afford to occupy a secondary position or to be contingent on other branches of college activity. Every consideration merits placing it in position where it can determine its own ends and shape its means to those ends. As the most exacting of the various functions of the college and the one most fundamental to the success of all the branches, it needs to be free to carry out its purpose and it deserves to be an object of concern.